INFECTION CONTROL PRACTICES

AMONG PRIVATE DENTISTS IN HONG KONG

Group 5.2:

CHAN Ka Leung
CHU Kwok Hung
LO Sung Ming
LOO Shuk Ling
LUI Wing Hong
WONG Sau Ming
WONG Tung Hong

Advisor:

Dr. E.C.M. Lo

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1. ABSTRACT

As there was little information available on the infection control practices among dental practitioners in Hong Kong, this study aimed to collect data in this area as well as the public's worry with regard to cross-infection during dental treatment. A total of 348 adults were interviewed in various public areas throughout Hong Kong. Although the majority (80%) thought it was safe to receive dental care, 41% and 29% of them thought they might get AIDS and hepatitis respectively through dental treatment. It was also reported that only 75% of the registered and 50% of the unregistered dentists who treated the interviewees wore gloves.

In this study, 500 questionnaires were sent to registered private dentists by mail to elicit information on their infection control practices. 121 completed questionnaires were returned and thus the response rate was 24.2%. The data showed that only 71% of the respondents took patient medical history on infectious diseases and two-thirds of them asked specific questions on hepatitis B exposure despite that about 10% of Hong Kong adults were carriers. About 80% of the dentists reported that they always wore gloves during patient treatment and among them half would replace the gloves for a new patient. Nearly all dentists used disposable needles and cartridges for giving local anaesthetics. Autoclaving (74%) was the most common method used to sterilize instruments, followed by disinfectants (18%) and boiling water (5%). Handpieces and 3-in-1 syringe were usually cleaned by wiping, with or without chemical disinfectant. Most of the respondents thought that their knowledge on infection control was adequate and some reported that obstacles like lack of time and financial problems prevented them from achieving an ideal level of infection control.

In conclusion, the public were concerned about the possibility of getting infectious diseases through dental treatment and the profession needed to ease their worries through various health education activities. Guidelines on standard infection control procedures which suited the local situations and more education for the dentists and their staff regarding this aspect were needed.

2. INTRODUCTION

According to the Centre for Disease Control in the U.S.A., as many as 100 Americans may have been infected with Human Immunodeficiency Virus (HIV) by dental practitioners[1]. The most famous example recently in the press was a patient from Florida in USA who had been transmitted HIV from an infected dentist through routine dental treatment. This incidence raised public awareness across the world. Since then, patients are more concerned about acquiring HIV infection than any other diseases via dental treatment. Despite of this current interest, Hepatitis B being another infectious disease which may be transmitted in dentistry also deserves attention. The risk of acquiring Hepatitis B infection through injuries and needle pricks is about 6-30% which is far higher than HIV infection[2].

Hong Kong, like many modern metropolitan city, is densely populated. There is a high risk of cross infection from various infectious diseases in the daily life but the awareness in the population is low. Since there is no standard guidelines for infection control for the private dental practices in Hong Kong, this aspect is always under-emphasized and ignored. Recently cross infection in the private dental practices suddenly became a hot topic in the mass media[3]. This might raise the awareness of infection control in the dental profession. From our literature search, no information on how the dentists in Hong Kong perform their infection control in their practices could be found. Thus, we were interested in getting some information on this aspect and hopefully some suggestions for improvement could be made.

Being a health care worker, a dentist should find ways to prevent his/her patients and staff from acquiring any infectious disease during dental procedures. The main infection control activities undertaken by dental personnel may be divided into the following areas.

1. Taking a thorough medical history of the patient
2. General hygiene and protective measures
3. Sterilization and disinfection of instruments and equipment
4. Safeguards against needle pricks and sharps injuries

3. AIMS AND OBJECTIVES

The aims of this project were to investigate the current practice of infection control in the private dental clinics, and to make recommendations, if needed, on how to improve the situation for the benefit of the profession and the public.

The objectives of the project were :

1. To collect the public's opinion on infection control in dentistry and to describe their concern ;

2. To collect guidelines on infection control in dental practices from various sources ;

3. To collect information on the infection control procedures carried out by registered private dentists in Hong Kong ;

4. To identify areas where improvements can be made ; and

5. To give recommendations on improvements of infection control procedures to Hong Kong dentists.

4. METHODS AND MATERIALS

4.1 Project Outline

Our project was divided into the following four stages.

1. A questionnaire survey of the public's awareness of infection control in dental practices was carried out in March 1992.
2. A search of the literature was made to find out the most recent guidelines concerning infection control in dental practice issued by various authorities.
3. Based on the above findings, a questionnaire for dentists was constructed to investigate the current infection control procedures employed by the private general practice in Hong Kong. This questionnaire was sent to a random sample of private dentists in May 1992.
4. Finally, the collected data was analyzed and the results interpreted during July to August 1992. Appropriate recommendations were made and these were forwarded to the Hong Kong Dental Association.

4.2 Survey on public awareness

The format of this survey was short interviews of the people in public areas conducted by members of our dental student group. The draft questionnaire was pre-tested on a number of patients attending the Prince Philip Dental Hospital. The questionnaire was then modified and the final version used in the interviews contained 14 multiple choice questions. The questionnaire was in the form of questions followed by a range of possible answers. The interviewer read out the questions to the subjects but the possible answers were not provided unless there was no response from the subject. This was to avoid leading the subjects. The questionnaire in its original Chinese script can be found in Appendix 1.

The target interviewees were Hong Kong Chinese residents above 11 years old. The subjects were selected randomly in several public areas, e.g. bus and MTR stations, in different districts in Hong Kong. About 50 subjects were interviewed individually during each interview session. A total of seven interview sessions were conducted at different times of the day and on different days of the week.

4.3 Collection of guidelines

At the beginning of the project, we attempted to obtain guidelines on infection control from the Hong Kong Dental Association (HKDA) to be used as our reference. However, according to its Hon. Secretary, no guidelines had been issued by the HKDA. Some guidelines[4-5] were obtained from other sources, e.g. the Prince Philip Dental Hospital, and these were compared. Finally it was decided that the guidelines issued by the American Dental Association[6] would be used as the main reference material in constructing the questionnaire for the dentists.

4.4 Survey of dentists

Initially, it was planned to conduct a telephone survey on a random sample of private general dental practitioners. However, after some attempts, it was found that contacting them by telephone was very difficult and that they were reluctant to answer questions over the phone. Therefore, the idea of a telephone survey was abandoned and instead a mail questionnaire survey was employed.

The questionnaire consisted of 20 questions covering the following aspects concerning the practice of infection control in the dentists' clinics.

1. Taking medical histories of their patients
2. General hygiene and protective measures
3. Sterilization and disinfection of instruments and equipment
4. Local anaesthetic procedures and avoidance of needle pricks
5. Their knowledge on infection control procedures

The questionnaire was anonymous and designed for self-completion. Some questions allowed for a single answer (Yes/No type), some allowed for multiple answers, and some required written comments. There was no commitment to reply to every question. The questionnaire was printed in English and is attached in appendix 3.

A random sample of 500 dentists were systematically selected in clusters from the 1991 Dentist Register published by the government. The questionnaire, accompanied by a covering letter (appendix 2) explaining the purpose of the survey and a stamped addressed return envelope, was sent to the registered practising address of the selected dentist. However, it was not known whether the addresses were correct as some dentists might have moved during 1991-92.

5. RESULTS

5.1 Survey on public awareness

A total of 348 Hong Kong residents were interviewed in this project. Their age and sex distribution is shown in Figure 1. Most of the subjects were below 40 years of age and the number of male and female interviewees were similar. Among the subjects, 77% and 12% had received secondary education and post-secondary education respectively (Fig. 2). Among those who had visited a dentist within a year, 83% consulted a registered dentist and 8% visited an unregistered dental practitioner (Fig. 3). The majority of them, 80%, thought that it was safe to receive dental treatment. Only 5% considered it unsafe while 15% had no idea (Fig. 4). Interestingly 41% of them thought they might get AIDS while 29% thought they might get hepatitis through dental treatment (Fig. 5). A quarter of them thought they might get other infectious diseases. Their opinions on the safety of dental treatment and the possibility of being infected were mainly based on subjective thoughts (Fig. 6) while 14% got the information from mass media. A small proportion, 4%, acquired the information from schools, medical professions and their relatives. Among the dentists who rendered dental treatments to the interviewees, only half of the unregistered dentists wore gloves during the treatment while 75% of the registered dentist did so (Fig. 7).

5.2 Survey of dentists

A total of 121 completed questionnaire were received from the 500 questionnaires despatched. Thus, assuming all selected dentists had received the questionnaire, the response rate was 24.2%.

It was found that only 71% of the respondents took a medical history from their patients which included questions on infectious diseases, 54% at the first visit only and 17% did so at every subsequent visit (Fig. 8). About two-thirds of the dentists included questions on Hepatitis B exposure and other infectious diseases in the medical history (Fig. 9), and less than 40% of them included questions concerning whether the patient belonged to risk groups for AIDS or hepatitis. Less than 20% included questions on HIV antibody status.

Over 90% of the respondents were aware of their immune status against hepatitis B (Fig. 10) with 64% of the them having acquired immunity through vaccination and 14% had immunity through contracting the disease in the past.

About 80% of the dentists replied that they always wore gloves for patient treatment (Fig. 11). About half of them replaced their gloves for new patients and most of the rest just washed their gloves between patients (Fig. 12). Soap and chemical disinfectants were commonly used for washing hands or gloves (Fig. 13). 20% and 36% of the dentists used chemical disinfectant or soap only respectively, while 40% of them used both. During patient treatment, 84% of the dentists wore eye-glasses and nearly all wore face masks (Fig. 14). The use of face shield was uncommon.

Virtually all of the respondents used disposable needles (99%) and disposable cartridges (94%) for giving local anaesthetics and these were not reused for another patient. About two-fifths of the dentists used a needle capping device to recap their needles after giving an injection (Fig. 15). However, they did not report fewer needle pricks per year than the dentists who did not use a recapping device (Fig. 16).

Autoclaving was the most common method for routine sterilization of instruments, followed by chemical disinfectants (Fig. 17). As shown in Fig. 18, alcohol, being used by 85% of the respondents, was the most popular disinfectant, followed by glutaraldehyde (62%), chlorhexidine (50%) and hypochlorite solution (26%). After patient treatment, the handpieces and the 3-in-1 syringe were usually "cleaned" by wiping, with or without chemical disinfectants, by over 80% of the dentists (Fig. 19).

About 70% of the respondents felt that their knowledge on infection control was adequate (Fig. 20). Most of them got the information from their undergraduate training, reading journals and attending professional meetings (Fig. 21). Those who felt they did not have adequate knowledge reported that seminars/courses and journals articles were more appropriate for them (Fig. 22). About 70% of the respondents felt that their infection control practices were adequate while 20% felt the opposite (Fig. 23) and the latter claimed that time and financial factors were the main obstacles preventing them from achieving the ideal. Other obstacles like workload of DSA and size of office were mentioned by a few dentists.

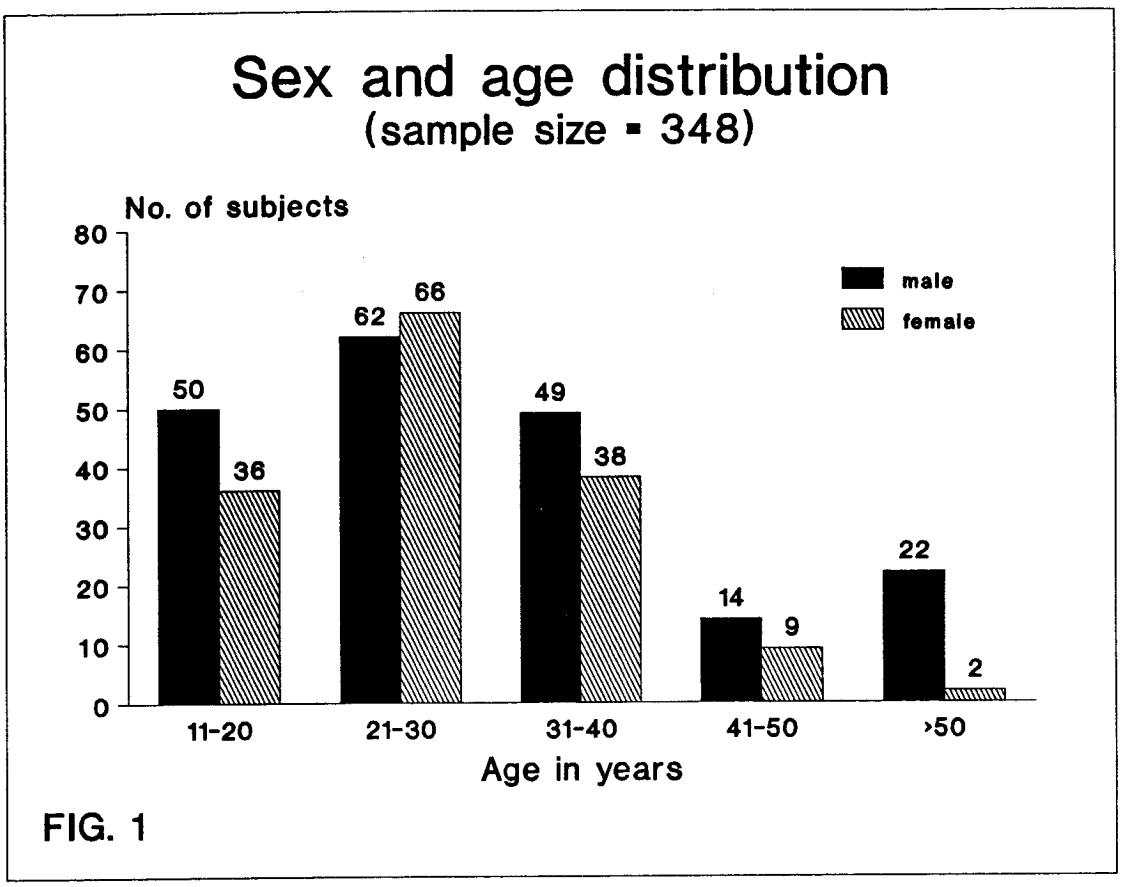
Sex and age distribution
(sample size = 348)
No. of subjects
80
70
60
50
40
30
20
10
0
male
female
50
36
62
66
49
38
14
9
22
2
11-20
21-30
31-40
41-50
>50
Age in years

FIG. 1

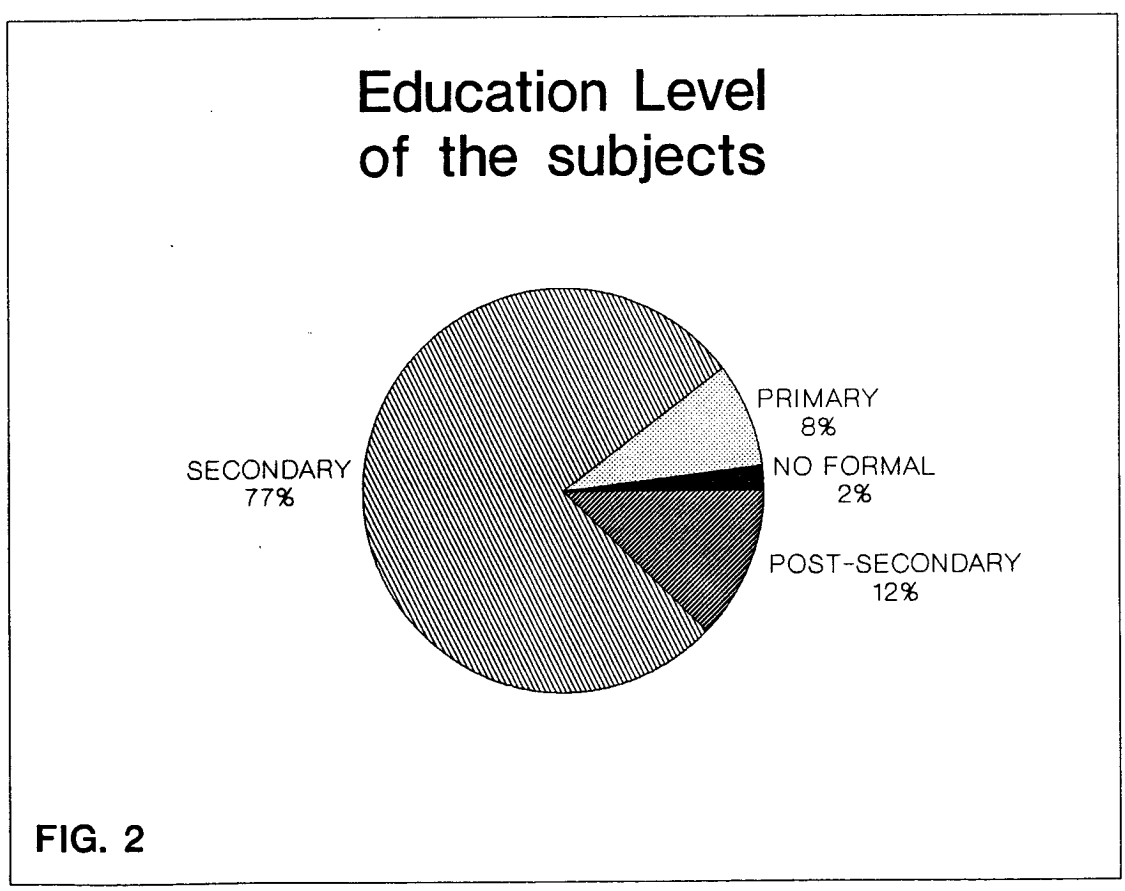
Education Level
of the subjects
PRIMARY
8%
NO FORMAL
2%
POST-SECONDARY
12%
SECONDARY
77%

FIG. 2

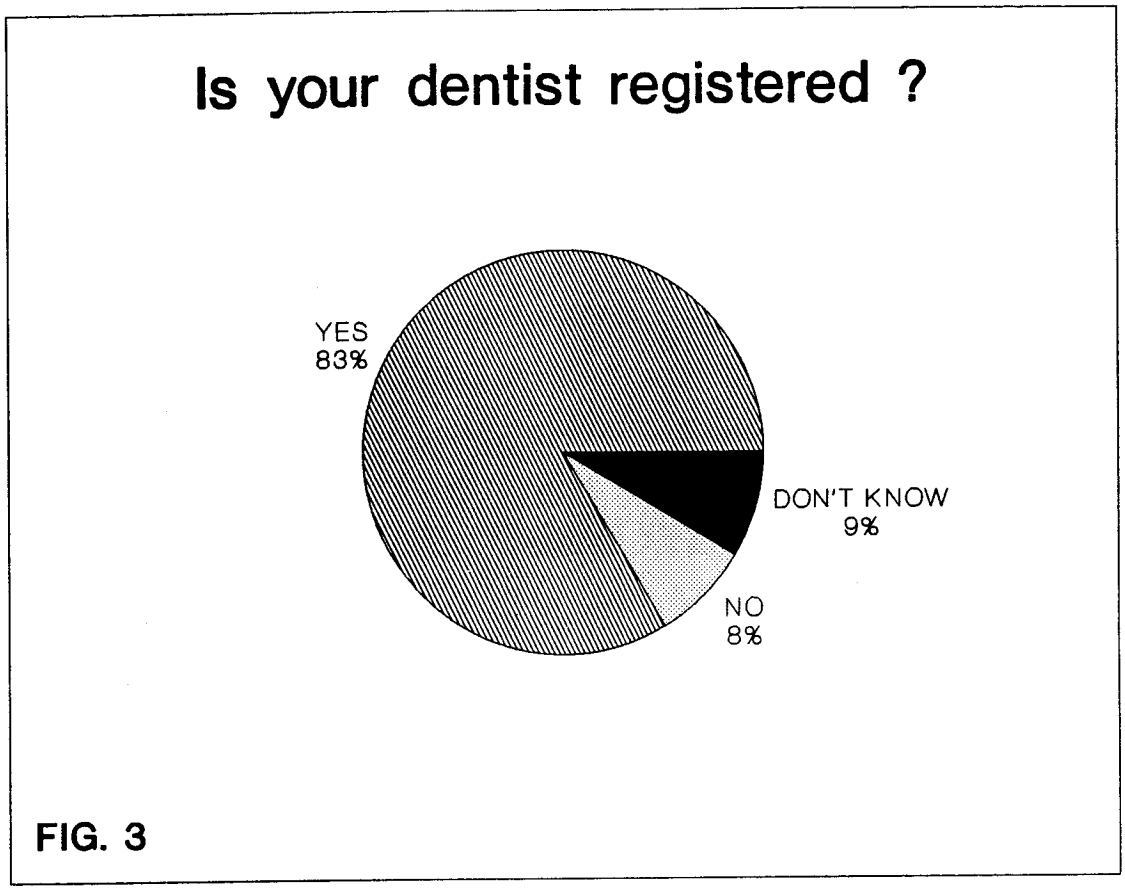
Is your dentist registered ?
YES
83%
DON'T KNOW
9%
NO
8%

FIG. 3

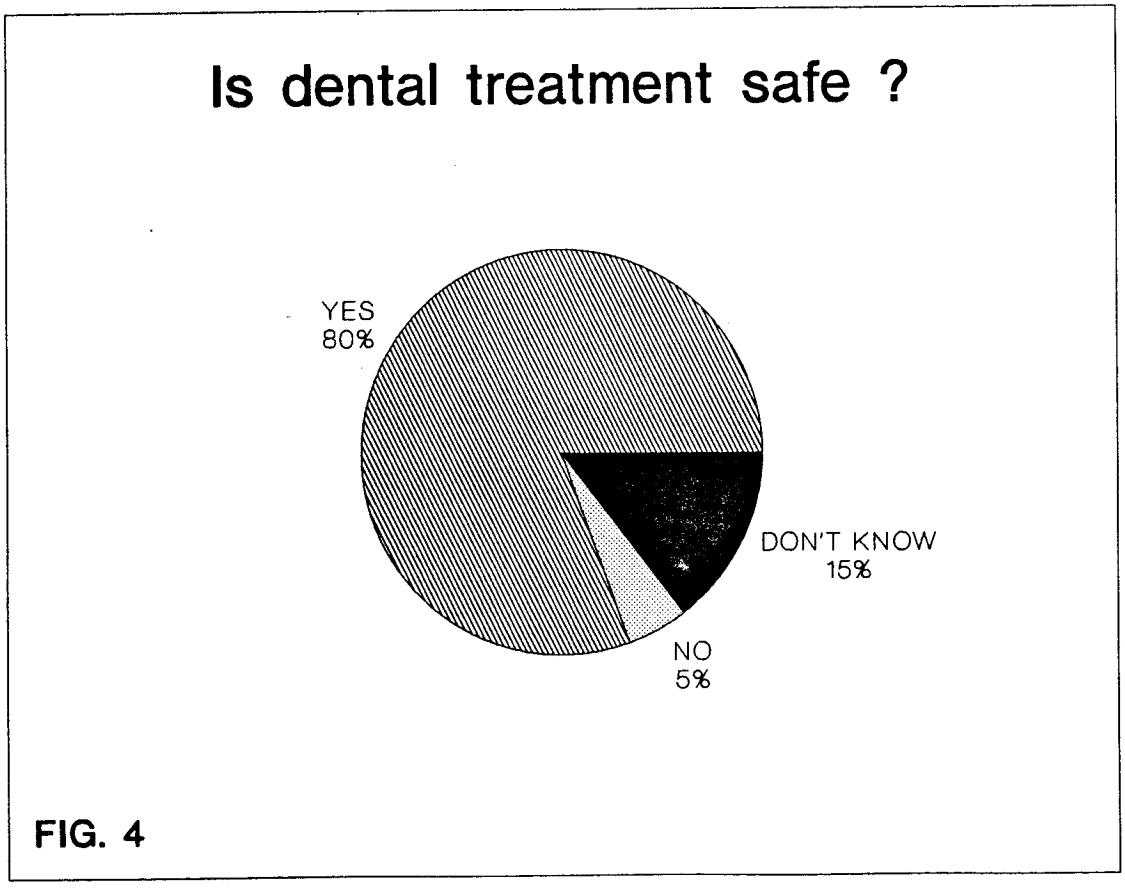
Is dental treatment safe ?
YES
80%
DON'T KNOW
15%
NO
5%

FIG. 4

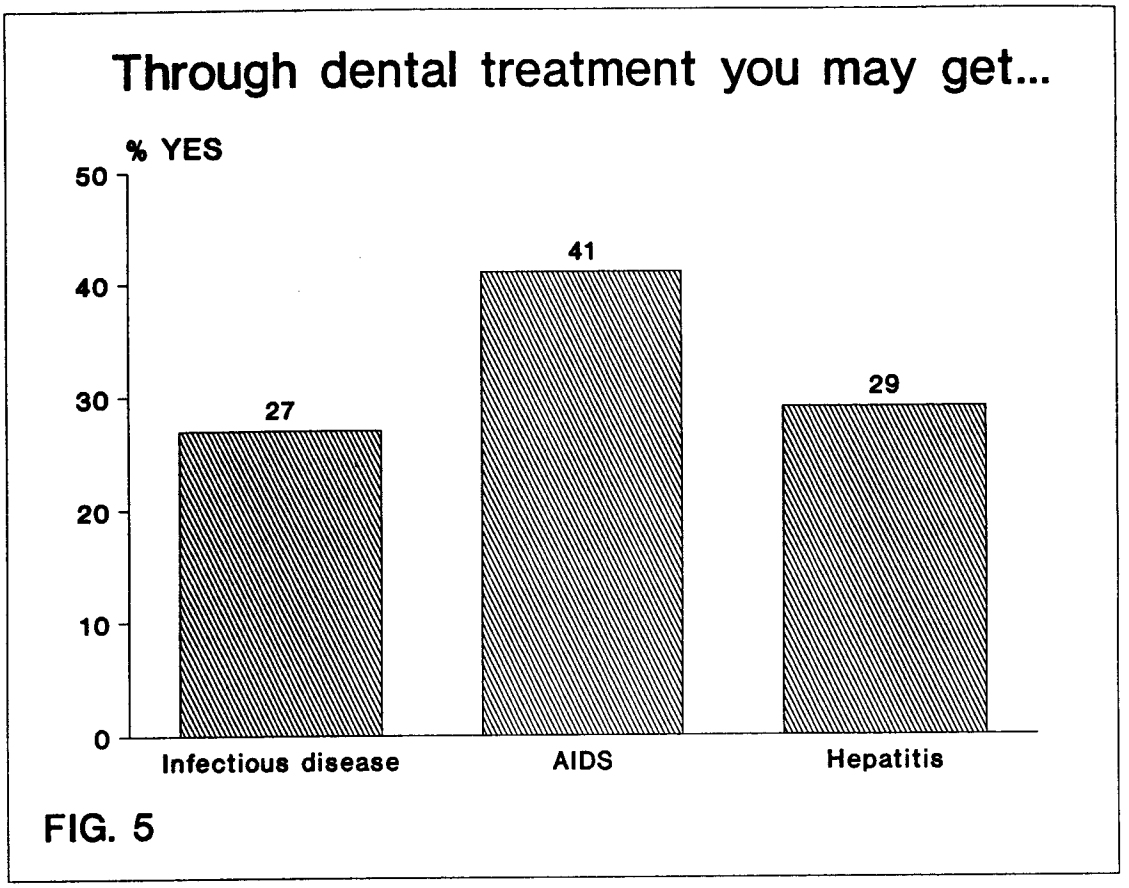
Through dental treatment you may get...
% YES
50
40
30
20
10
0
27
41
29
Infectious disease
AIDS
Hepatitis

FIG. 5

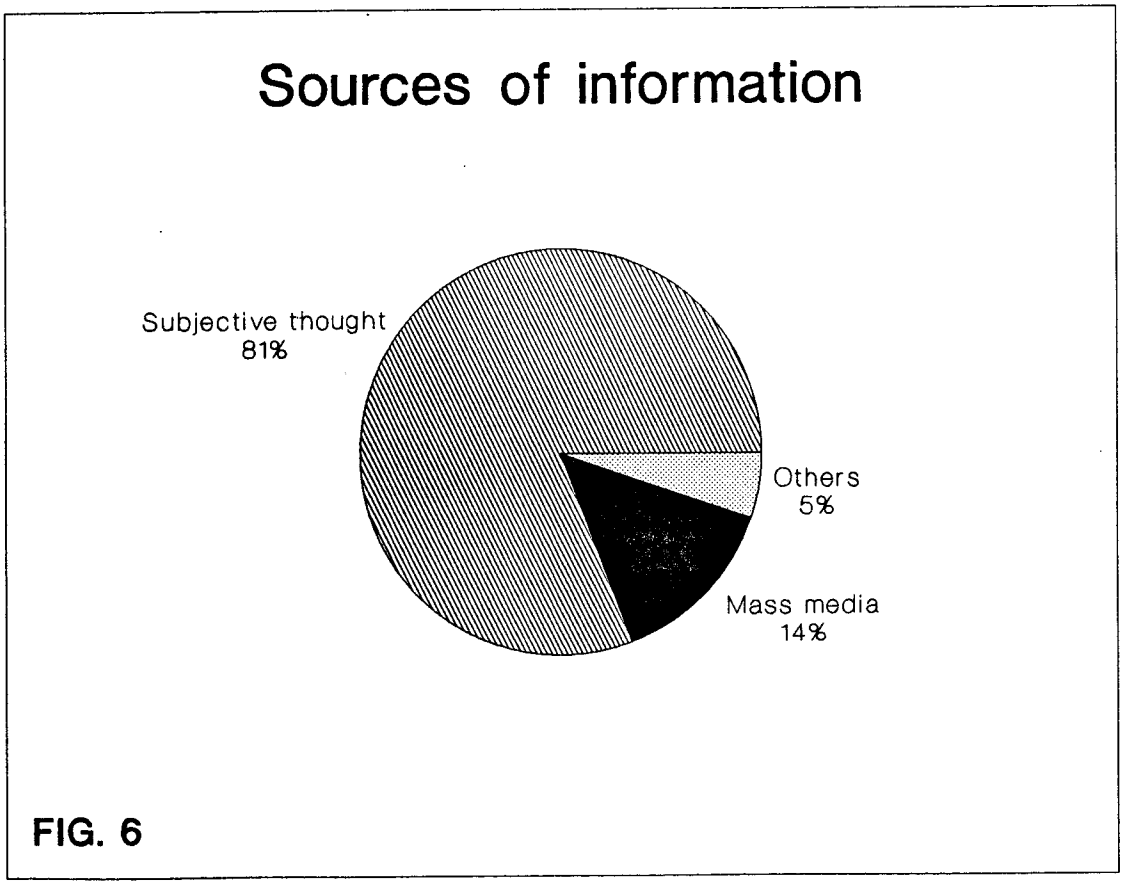
Sources of information
Subjective thought
81%
Others
5%
Mass media
14%

FIG. 6

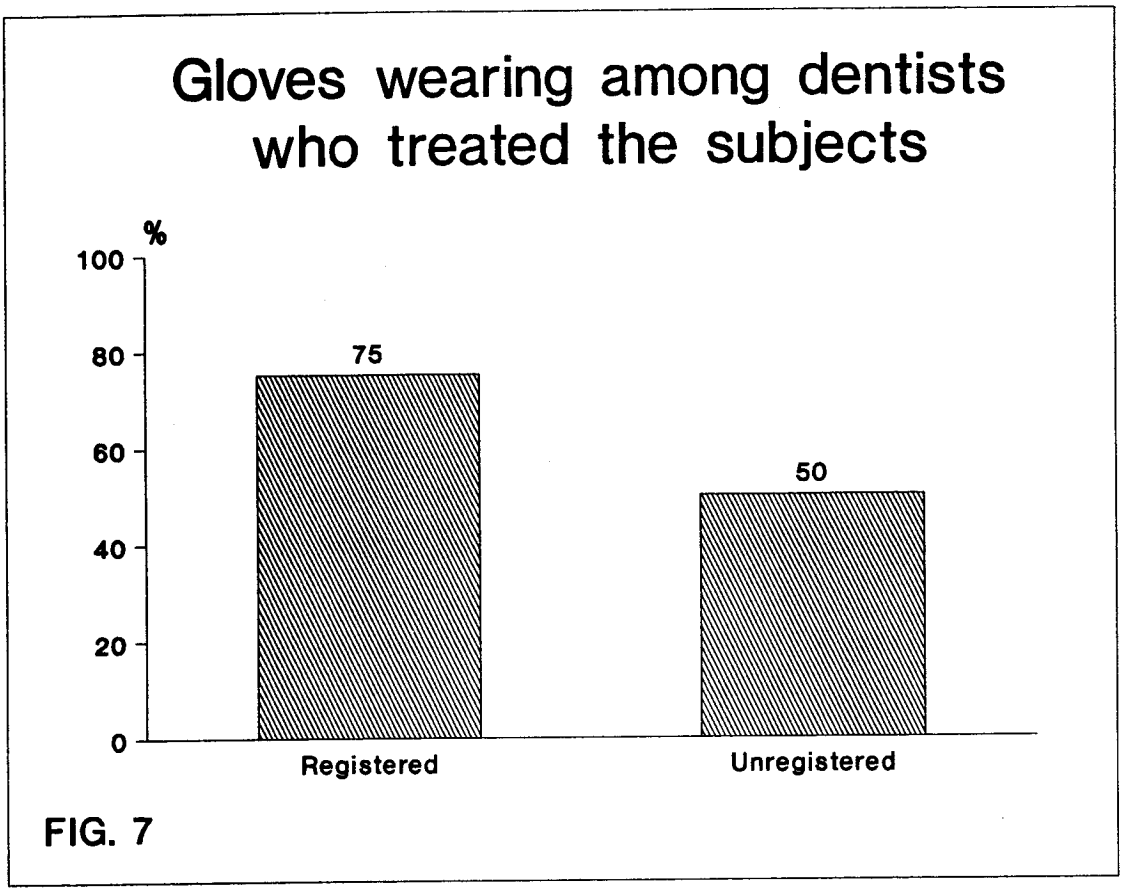
Gloves wearing among dentists who treated the subjects
%
100
80
60
40
20
0
75
50
Registered
Unregistered

FIG. 7

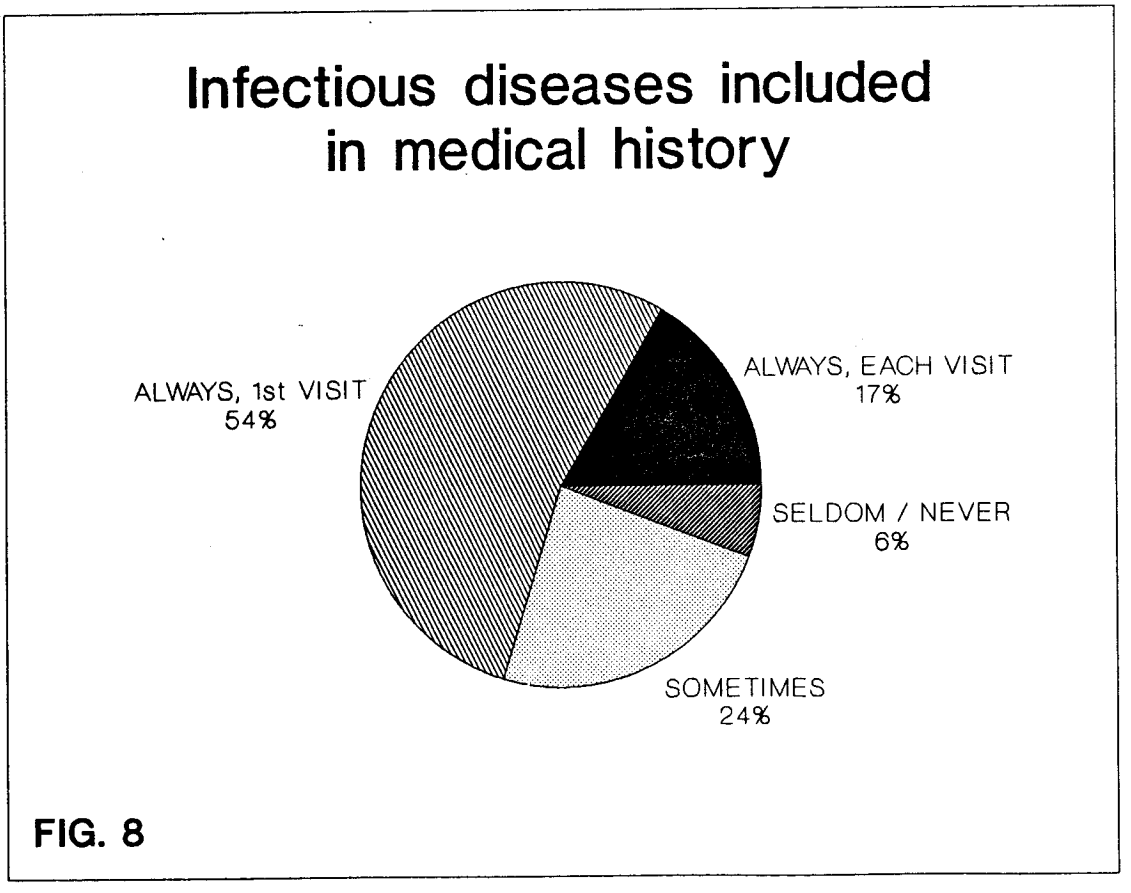
Infectious diseases included in medical history
ALWAYS, 1st VISIT
54%
ALWAYS, EACH VISIT
17%
SELDOM / NEVER
6%
SOMETIMES
24%

FIG. 8

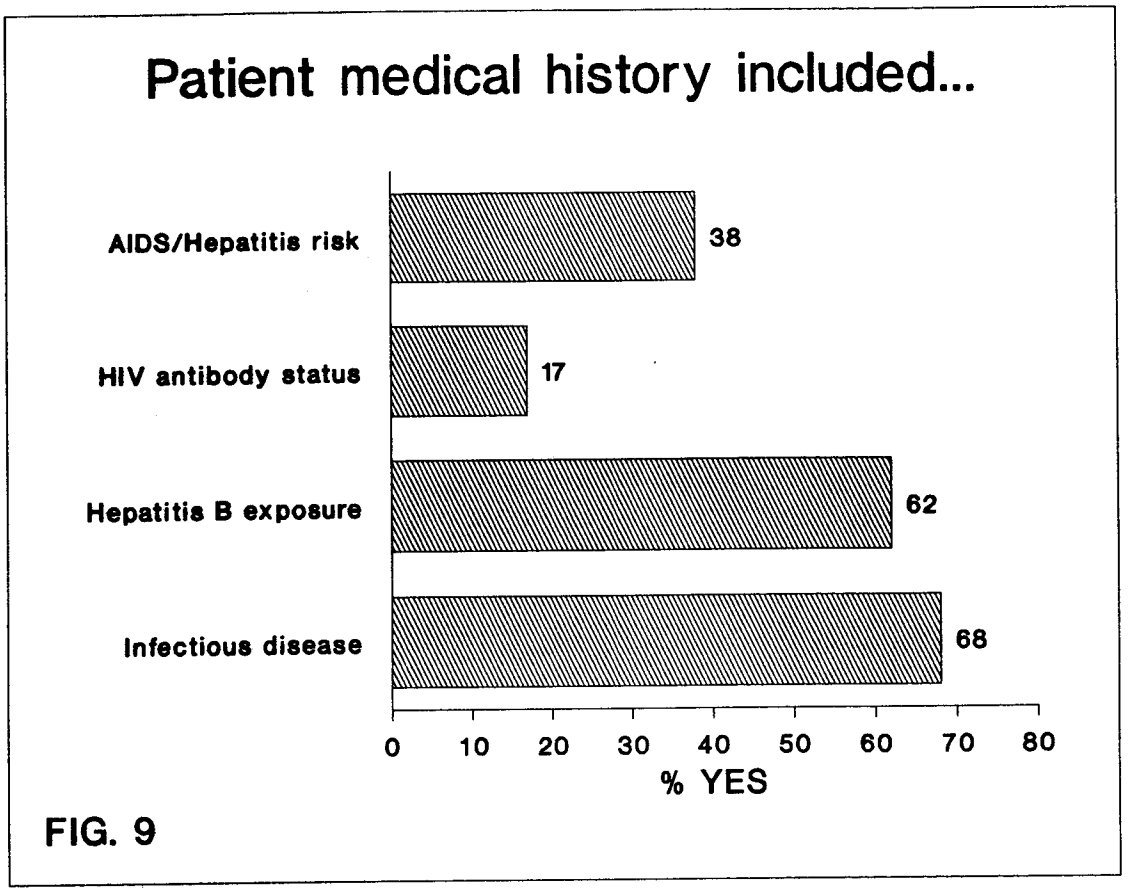
Patient medical history included...
AIDS/Hepatitis risk
38
HIV antibody status
17
Hepatitis B exposure
62
Infectious disease
68
0
10
20
30
40
50
60
70
80
% YES

FIG. 9

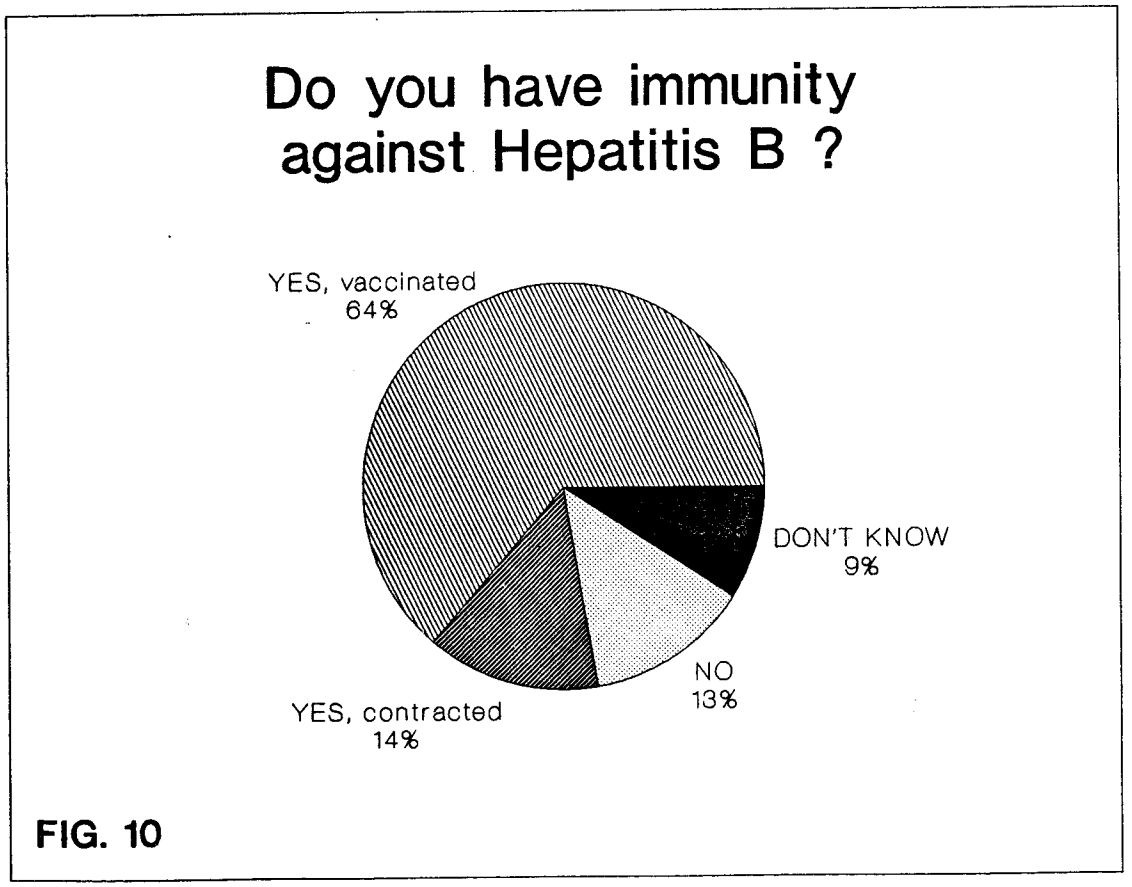
Do you have immunity against Hepatitis B ?
YES, vaccinated 64%
DON'T KNOW 9%
NO 13%
YES, contracted 14%

FIG. 10

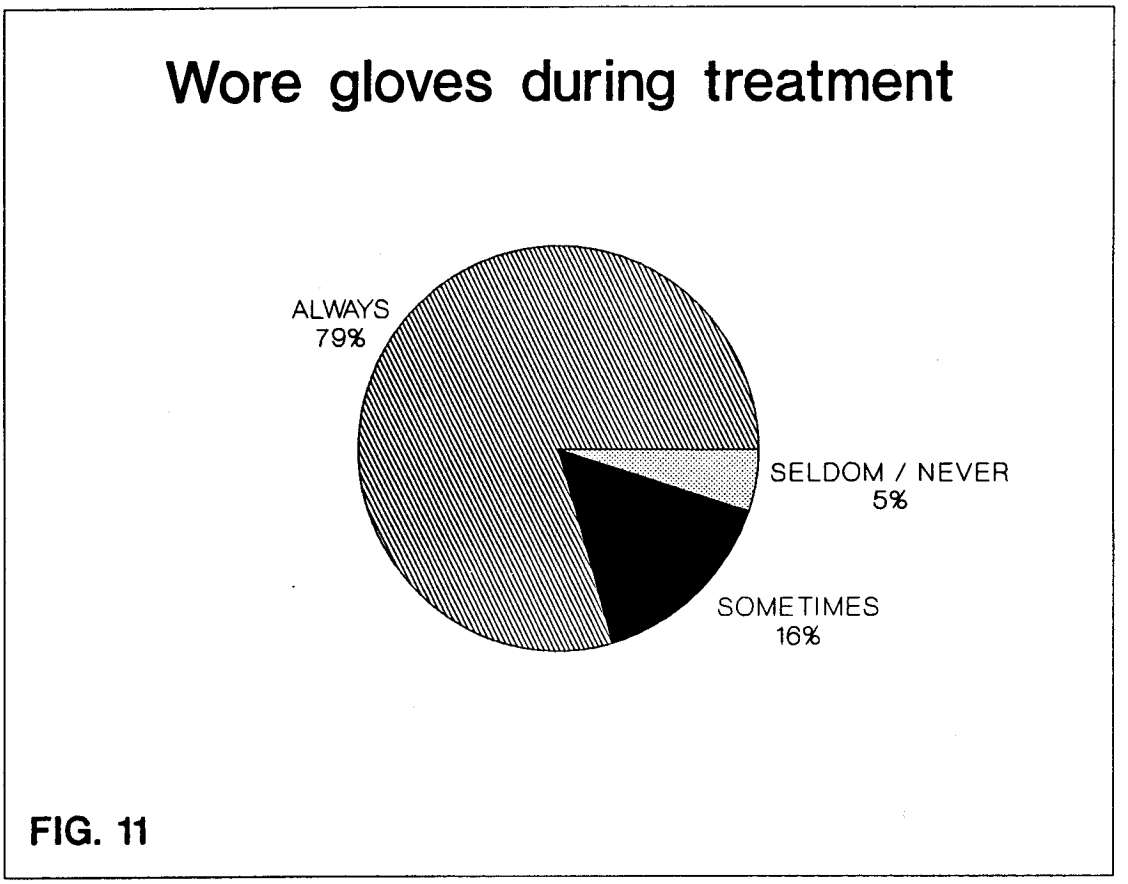
Wore gloves during treatment
ALWAYS
79%
SELDOM / NEVER
5%
SOMETIMES
16%

FIG. 11

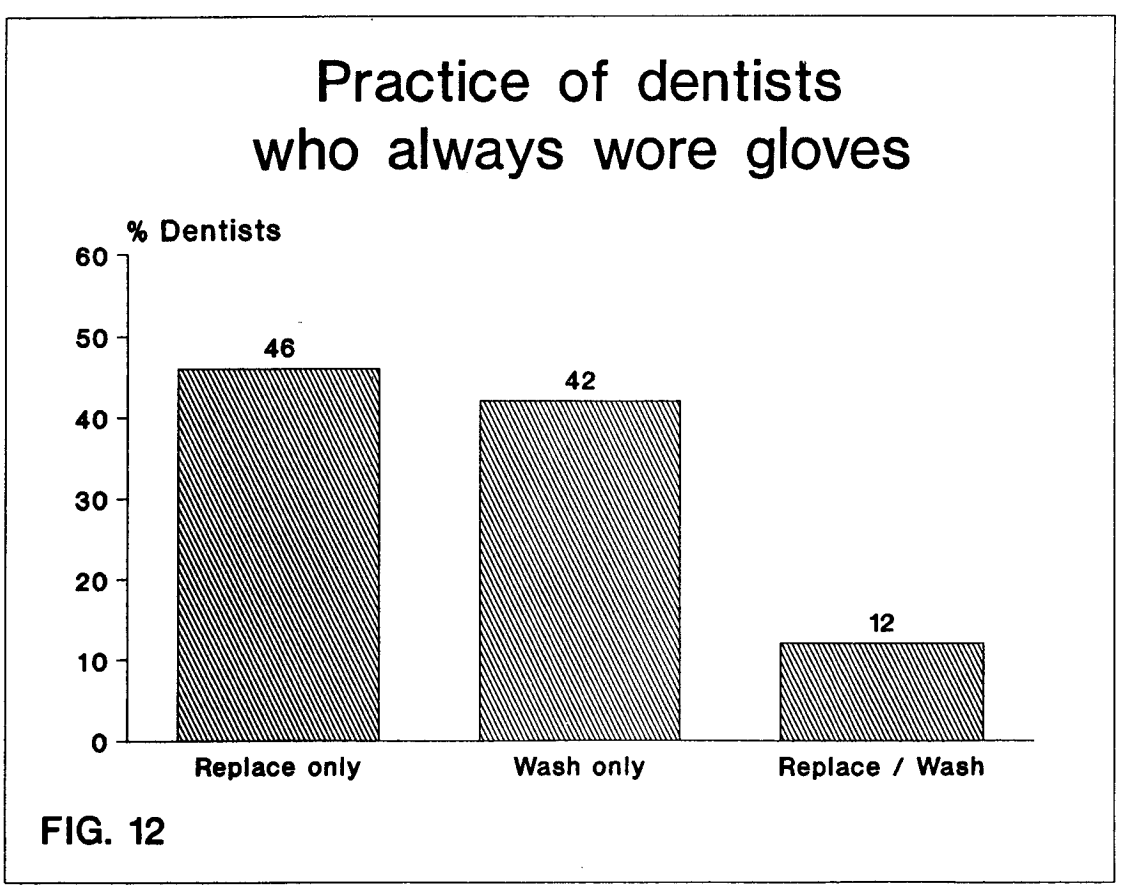
Practice of dentists
who always wore gloves
% Dentists
60
50
40
30
20
10
0
46
42
12
Replace only
Wash only
Replace / Wash

FIG. 12

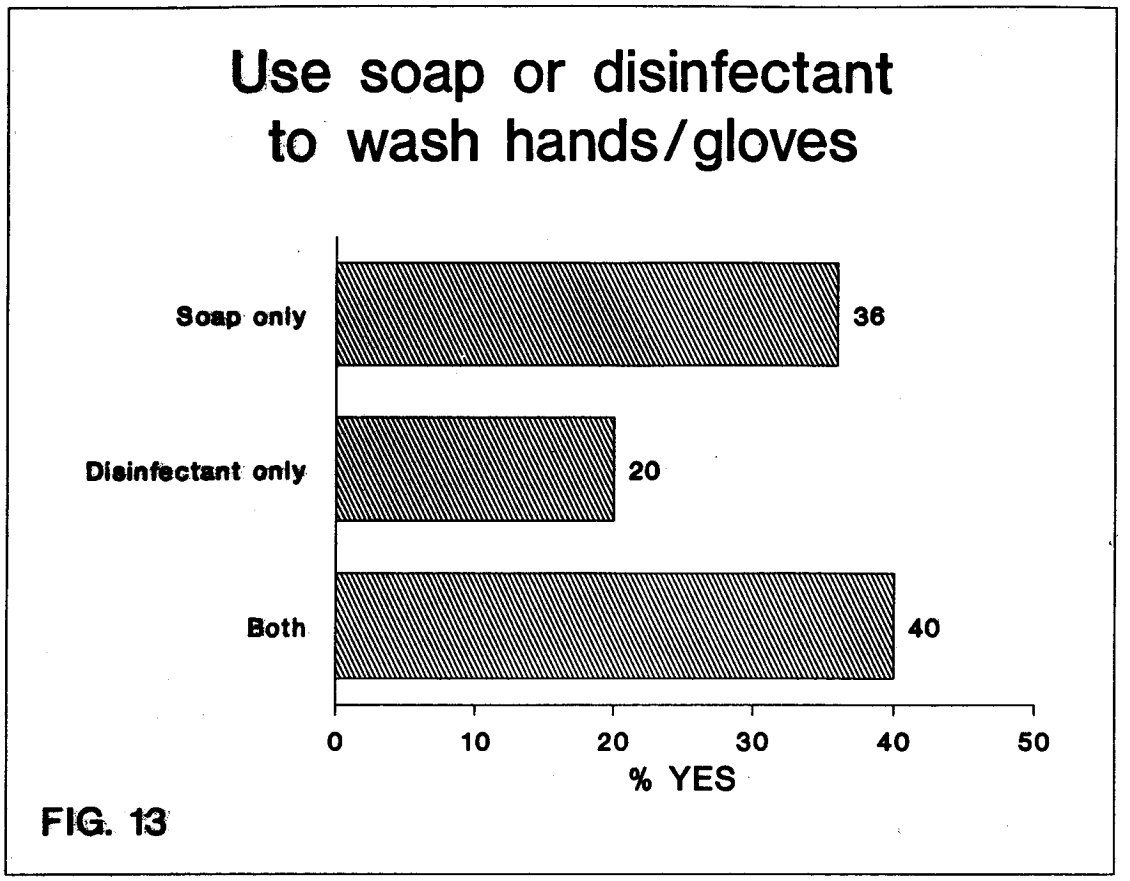
Use soap or disinfectant to wash hands/gloves
Soap only
36
Disinfectant only
20
Both
40
0
10
20
30
40
50
% YES

FIG. 13

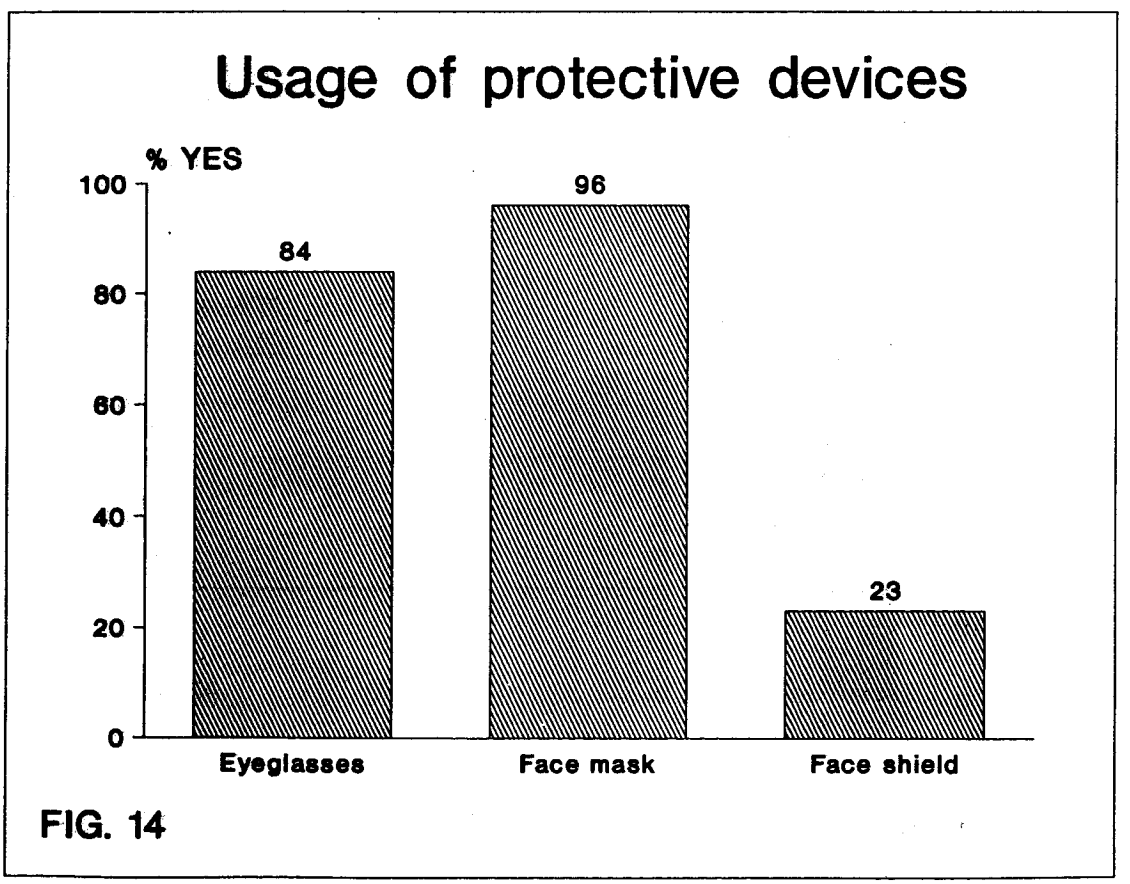
Usage of protective devices
% YES
100
80
60
40
20
0
84
96
23
Eyeglasses
Face mask
Face shield

FIG. 14

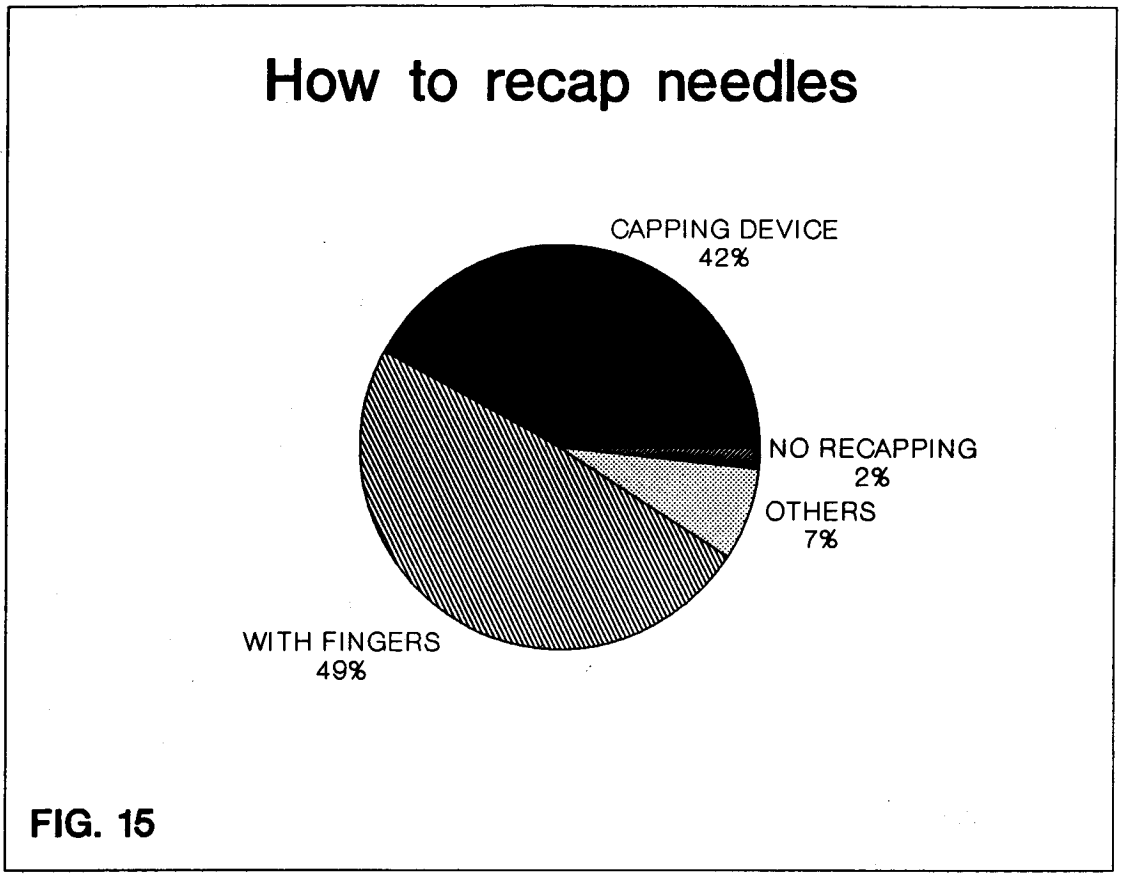
How to recap needles
CAPPING DEVICE
42%
NO RECAPPING
2%
OTHERS
7%
WITH FINGERS
49%

FIG. 15

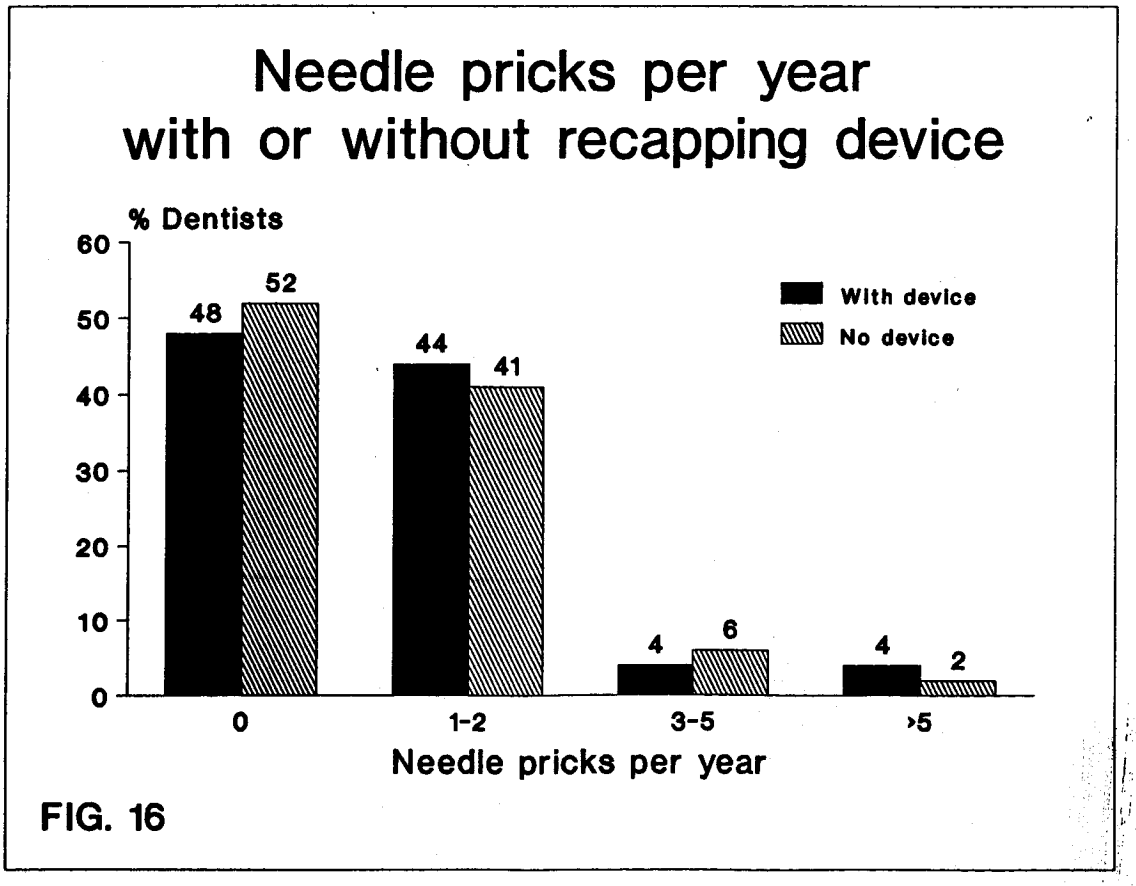
Needle pricks per year
with or without recapping device
% Dentists
60
50
40
30
20
10
0
48
52
44
41
4
6
4
2
With device
No device
0
1-2
3-5
>5
Needle pricks per year

FIG. 16

Common sterilization methods

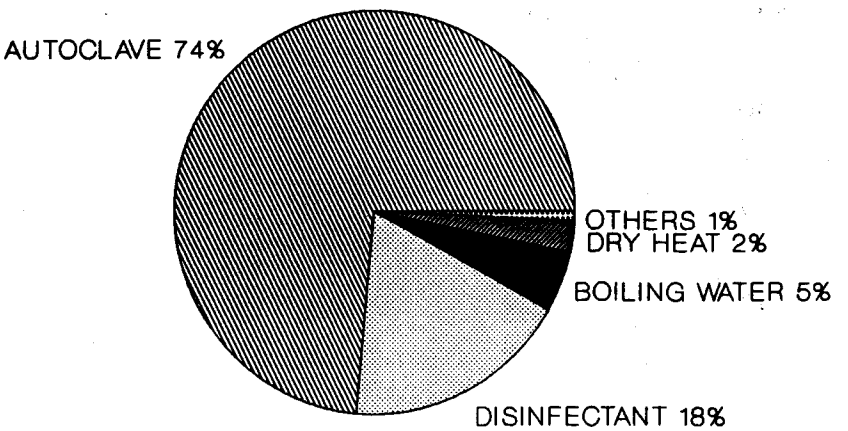

FIG. 17

Commonly used chemical disinfectants

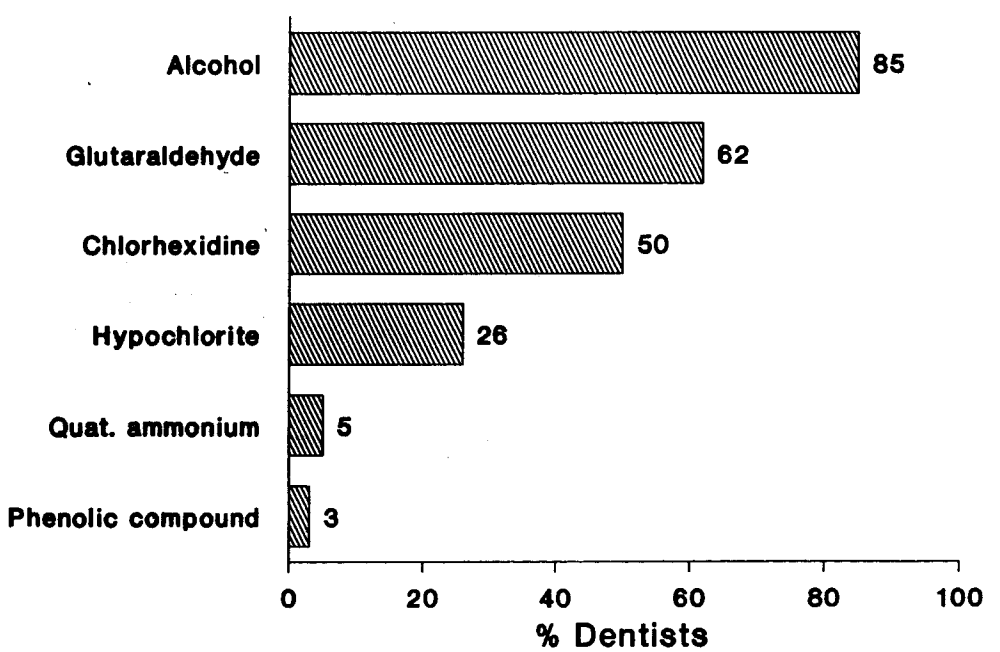

FIG. 18

Treatment of handpiece and 3-in-1 syringe between patients

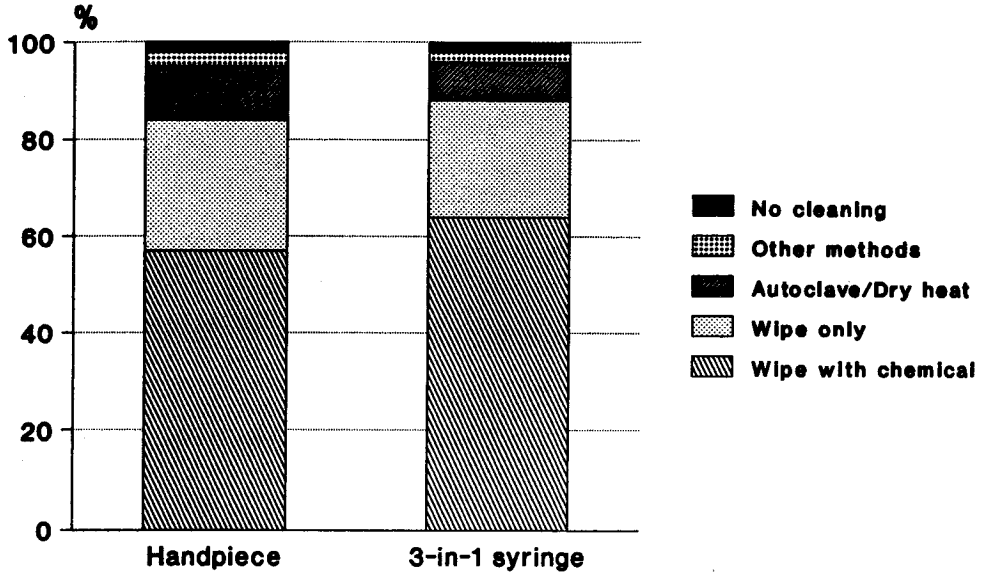

FIG. 19

Do you think you have adequate knowledge on infection control ?

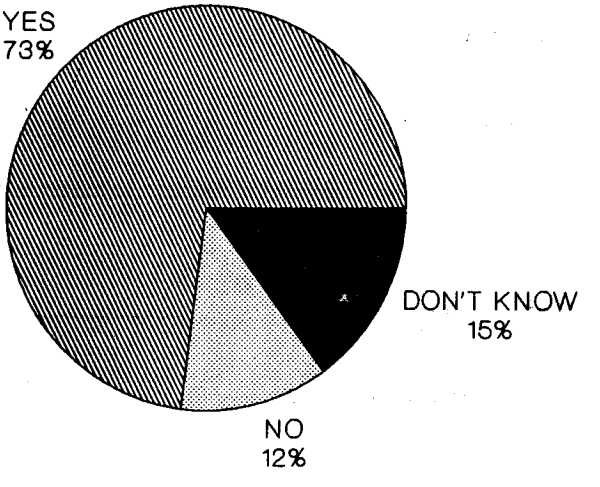

FIG. 20

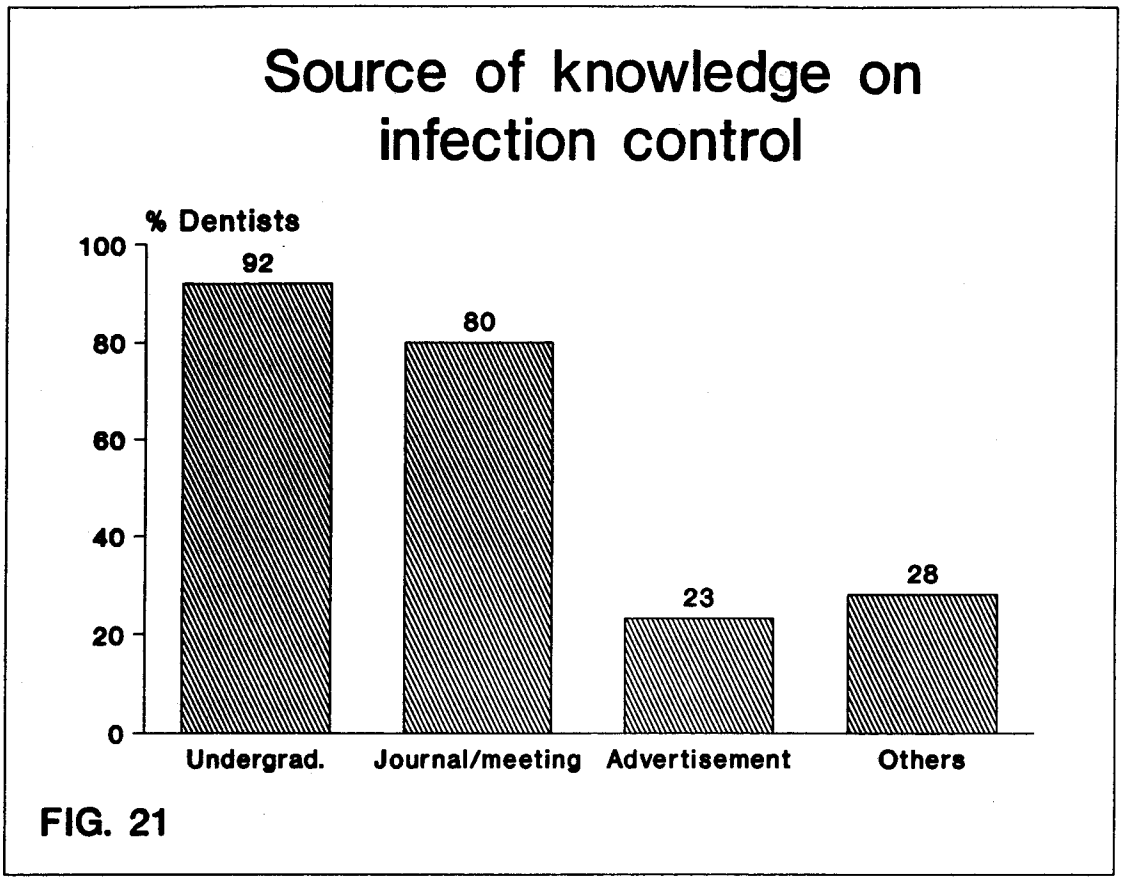
Source of knowledge on infection control
% Dentists
100
80
60
40
20
0
92
80
23
28
Undergrad.
Journal/meeting
Advertisement
Others

FIG. 21

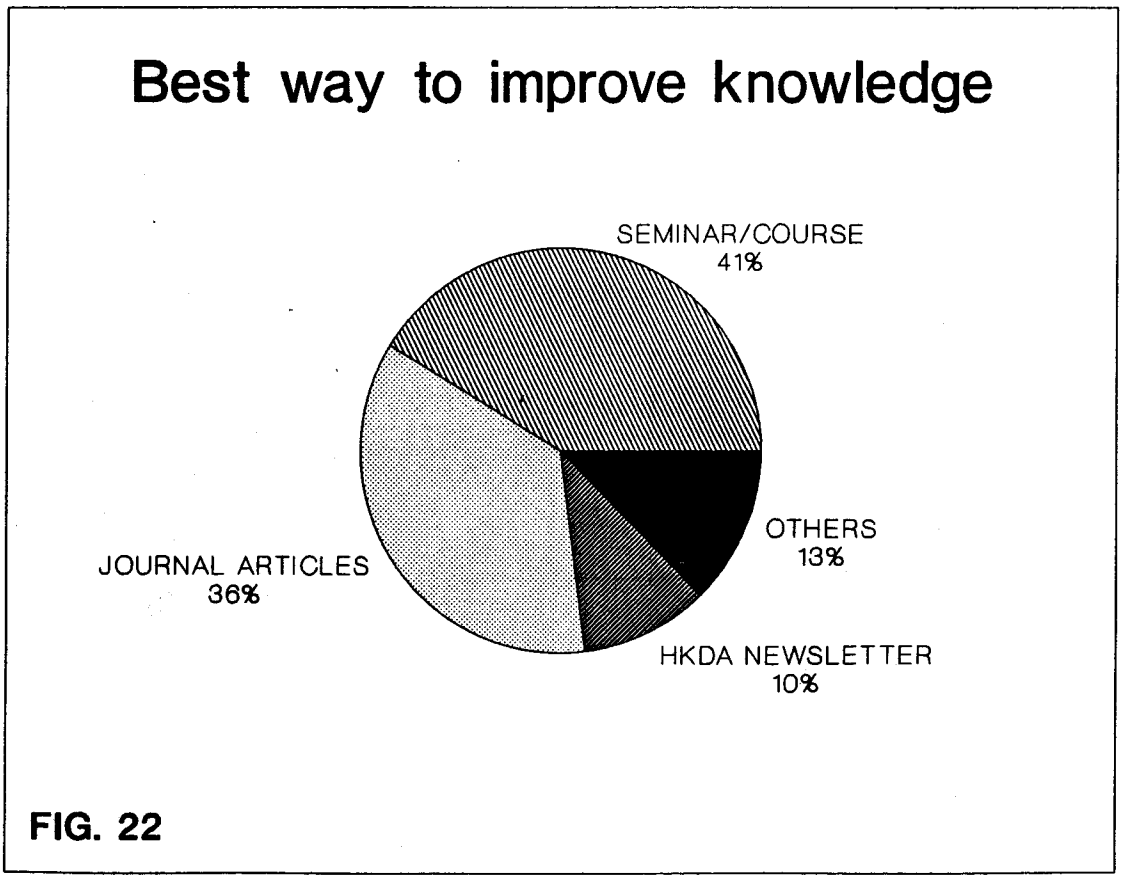
Best way to improve knowledge
SEMINAR/COURSE
41%
OTHERS
13%
HKDA NEWSLETTER
10%
JOURNAL ARTICLES
36%

FIG. 22

Do you think your infection control is adequate?

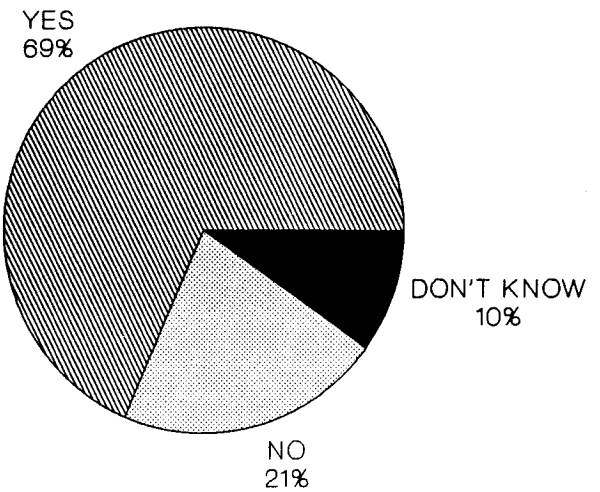

FIG. 23

Reported main obstacles in infection control

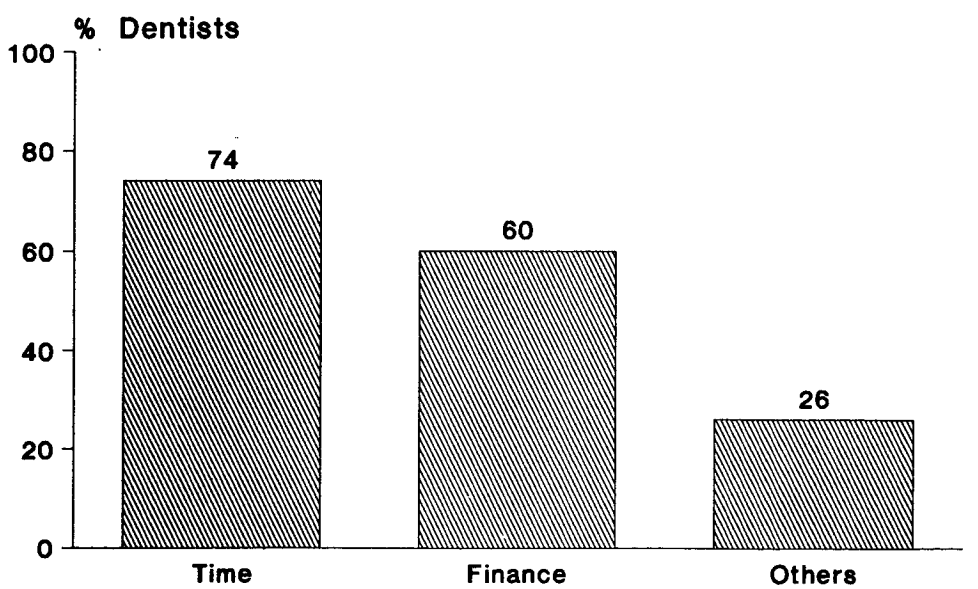

FIG. 24

6. DISCUSSION

In the survey of the general public, surprisingly, only 80% of our respondents considered it safe to receive dental treatment. Two-fifths of them even thought they might get HIV infection through dental treatment. The dental profession needs to address to this wide-spread worry in the public through mass media and other health education activities. Hopefully, the profession can reassure the public that seeking care from registered dentists is very safe.

Infection control in dental practice has emerged as an important factor in the light of recent developments and knowledge on a spectrum of new and old infectious diseases. The increasing awareness of the public in infection control has focused attention on the methods used in a dental practice to limit cross infection among patients, staff and the dentist. Since private general dental practitioners are the major dental care service providers in Hong Kong, they were chosen as our target group in this survey. Dentists working in hospitals and in the government were excluded since they had to follow certain standardised infection control procedures laid down by the authorities.

Mailed questionnaires was finally chosen as the method used in the survey of dentists because it was too difficult to contact the dentists by phone. The sample size would be greatly decreased if a face-to-face interview was to be conducted in the dentist's clinic since our resources were limited. Though the response rate of this survey, 24.2%, was comparable to a practice profile survey conducted by the Hong Kong Dental Association in 1989[7], it is not satisfactory. The major drawback of this survey is that the respondents may not be representative of the private dentists in Hong Kong. The other dentists who were not surveyed may perform worse or better than our findings.

Although taking a medical history on infectious diseases is an important measure in the prevention of cross-infection during dental treatment, 29% of the dentists who responded to our survey only sometimes or even seldom did so. Hence, these dentists put their patients and themselves at risk of infection. As Hepatitis B is endemic in Hong Kong and there is a tremendous increase in the incidence of AIDS in Southeast Asia, a thorough medical history should include questions on these two diseases.

It was gratifying to find that 80% of the dentists had immunity against Hepatitis B either through vaccination or previous exposure to the disease. Since hepatitis B is a common infectious disease in Hong Kong, more education on active immunization should be given to the rest 20% of the dentists. This would help to protect them against accidentally contracting and spreading the disease. Furthermore, the dentists should be reminded to check their antibody status regularly and to receive a booster injection 3-5 years later after the first injection.

Against the recommendation that dentists should always wear gloves during treatment[7], this was done by only 80% of our respondents. This finding is in agreement with our survey of the general public in which 75% of the respondents reported that their dentists wore gloves during treatment. This percentage is not satisfactory and this aspect of personal protection has to be reinforced. Though some dentist may get contact dermatitis in wearing rubber gloves, other types of gloves are available.

Among the dentists who reported that they always wore gloves, 46% replaced their gloves between patients and 42% just washed their gloves only. The latter practice is considered to be unacceptable by the ADA[6]. A small proportion of the dentists, 12%, reported that they would either replace or wash the gloves between patients. How they decided when to replace or to wash the gloves was not explained. This probably would depend on the condition of the gloves.

Quite a proportion, 40%, of the dentists washed their hands or gloves with soap only. This is not desirable because there was a study showing the use of disinfectants, like chlohexidine gluconate, was 2.5 times more effective than soap in removing micro-organism during hand washing[9].

There are generally two types of eyeglasses available in the market, the protective spectacles and the fashion spectacles. In our survey, the dentists were not asked to indicate which type they were using. Specially designed protective eyeglasses are recommended for clinical uses, as they provide better protection at the bridge and sides, and they can be easily cleaned using common chemical disinfectants[10]. We were amased to find that face masks were commonly used by the dentists. The mask can protect a dentist from inhaling large amount of droplets-

borne debris. However, it was found that a face mask would become fairly ineffective in preventing the inhalation of contaminated droplets if its peripheries were not properly sealed[7]. So the use of high volume suction plus face masks with tissue adhesive surfaces for sealing the periphery is strongly recommended.

Needle-prick injuries can transmit many serious infectious diseases in the dental clinic and should be avoided. It is important to note that disposable needles and cartridges was nearly universally used in Hong Kong. All but 2% of the dentists recapped the needles after giving an injection. However, no significant reduction in the number needle pricks were reported by the dentists who used special recapping device as compared to those who did not use such a device. This may explained by the fact that needle pricks can happen at times other than during recapping or uncapping the needles, e.g. during the insertion and withdrawal phase of injections when uncapped needles are transferred between hands, etc. Thus, we would still recommend the use of these devices as they can minimise the risk of needle pricks in some procedures.

Chemical disinfectants are commonly used for disinfecting surfaces or instruments that cannot be sterilized. However, it should be stressed that their effectiveness depend on their appropriate use, e.g. concentration, method of application and storage. Alcohol has not been accepted as an adequate disinfectant[11] for use in dental clinics by the Council on Dental Therapeutics of the American Dental Association (ADA) since 1978. It was found in our survey that handpieces and 3-in-1 syringes were usually just wiped with chemicals after use, mostly with alcohol. This practice was not encouraged as a routine sterilization procedure by the ADA[6].

Among the reported obstacles for achieving adequate infection control, time and financial constraints were most commonly cited. The dentists might think that their practice was too busy for the extra time required for proper infection control procedures. Autoclaving would also decrease the life span of some instrument, e.g. handpiece. The dentists would need to purchase more instruments to allow for the long sterilization time cycle of autoclave. However, in the light of providing a safe service to patients and protecting the health of the dentist and their staff, these extra time and money is worth spending.

7. CONCLUSIONS

Results of our interviews with the general public clearly showed that they were concerned about the possibility of getting infectious diseases through dental treatment. The dental profession needs to address to their concern through various health education activities.

Due to the limitation of the relatively low respond rate of the dentists survey, no firm conclusions could be drawn on the infection control practices of the private dentists in Hong Kong. However, the results did show a rough picture on this aspect, and the following are some areas that our profession should pay serious attention to.

1. The need for some guidelines on standard infection control procedures that suit the local situations.

2. More education for the dentists and their staff regarding :

   a. the importance of vaccination against common infectious disease to protect their own health and that of their patients.

   b. the importance of wearing gloves during dental procedures and their replacement between patients.

   c. the risk of spreading blood-borne diseases through the practice of reusing needles and cartridges by some dentists.

   d. proper sterilization of instruments, especially handpieces and 3-in-1 syringes.

8. RECOMMENDATIONS

1. A set of guidelines on infection control should be formulated and issued to all dentists in Hong Kong. The Hong Kong Dental Association (HKDA) is the most appropriate authority to do so.

2. The HKDA should continue to disseminate updated information on infection control to the profession and dental ancillaries through newsletters, seminars, courses, and video tapes etc.

3. Further studies and investigations are needed to monitor the practice of infection control in dental clinics in Hong Kong.

4. Health education programmes in the mass media should contain messages on infection control in dentistry to enhance the development of positive attitudes towards dental treatment and to improve the communication between the profession and the public.

9. ACKNOWLEDGEMENTS

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您好！我係香港大學牙醫學院嘅學生。我哋而家做緊一個有關一般市民對於牙科治療嘅意見調查，想阻您幾分鐘，您所提供嘅資料我哋係會保密嘅。

一，請問你最近一年內有冇睇過牙醫？

二，請問你嘅牙醫有冇香港合法牌照？

三，請問你覺得而家去睇牙醫安唔安全？

四，請問你覺得睇牙醫會唔會得到疾病？

五，請問你覺得睇牙醫會唔會得到愛滋病？

六，請問你覺得睇牙醫會唔會得到肝炎？

七，請問你點解會咁樣覺得？

八，請問你或者你嘅屋企人有冇曾經因為接受牙科治療而染到疾病？
如果有，係乜野病？

九，請問你最近睇牙醫時，佢有冇戴
a. 手套？
b. 口罩？

十，請問你覺得而家係牙科診所照X光會唔會影響健康？

十一，請問你覺得牙醫應唔應該
a. 戴手套？
b. 戴口罩？
c. 消毒用過嘅工具？

十二，請問你嘅教育程度係？

十三，請問你嘅年齡係？

十四，請問你嘅性別係？

多謝您嘅合作！

答案紙

No: _____

1. ___ 有 ___ 冇
   4

2. ___ 有 ___ 冇 ___ 唔知道 ___ 唔適用
   5

3. ___ 安全 ___ 唔安全 ___ 唔知道
   6

4. ___ 會 ___ 唔會 ___ 唔知道
   7

5. ___ 會 ___ 唔會 ___ 唔知道
   8

6. ___ 會 ___ 唔會 ___ 唔知道
   9

7. ___ 自己覺得 ___ 親友 ___ 傳媒 ___ 張/醫生 ___ 學校
   10

8. ___ 有 (_____) ___ 冇
   11

9a. ___ 有 ___ 冇 ___ 唔記得
    13
 b. ___ 有 ___ 冇 ___ 唔記得
    14

10. ___ 會 ___ 唔會 ___ 唔知道
    15

11a. ___ 應該 ___ 唔應該 ___ 冇意見
     16
 b. ___ 應該 ___ 唔應該 ___ 冇意見
     17
 c. ___ 應該 ___ 唔應該 ___ 冇意見
     18

12. ___ 小學以下 ___ 小學程度 ___ 中學程度 ___ 大專或以上
    19

13. ___ 11~20 ___ 21~30 ___ 31~40 ___ 41~50 ___ >50
    20

14. ___ 男 ___ 女
    21

15. 調查員編號 _____
    22

University of Hong Kong
Faculty of Dentistry

Periodontology and Public Health
Prof W I R Davies

The Prince Philip Dental Hospital, Hospital Road, Hong Kong.

Our Ref.: CHP92/GP2/02/92

21 May 1992

Dear Sir/Madam,

Survey on Infection Control among Hong Kong Dentists

We are a group of final year dental students in The University of Hong Kong. As our community health project which is part of our public health course, we are conducting a survey on infection control among a random sample of about 500 dentists in Hong Kong. You are cordially invited to participate in this survey.

Enclosed are a questionnaire and a prepaid addressed return envelop. The questionnaire contains some questions that require a single answer and some allow for multiple answers. There is no commitment to reply to every question. We would very much appreciate if you could find time to answer the questionnaire and return it to us. Your information will be kept confidential and is to be pooled with those from other dentists for analysis. We hope to make some recommendations according to the survey results which can improve the infection control of dental practice for dentists and patients in Hong Kong. The success of this survey depends very much on your support and participation.

Meanwhile, should you have any queries regarding this survey, please feel free to contact our advisor, Dr. Edward Lo at 8590422.

Thank you for your cooperation.

Yours sincerely,

Mr. Samuel S.M. Lo
Coordinator
Group 4.2

Dr. Edward C.M. Lo (Project Advisor)
Lecturer
Periodontology and Public Health

Encls.

GROUP 4.2 COMMUNITY HEALTH PROJECT 1992
Survey on Infection Control among Hong Kong Dentists

Dear Dentist,

Please choose the most appropriate answer but you may choose more than one answer in some questions. You may leave blank in the questions which you would not like to answer. Your response will be treated anonymously with complete confidentiality.

1. How often do you take a medical history which includes question on infectious disease?

_____ 1. Always, at each visit
_____ 2. Always, first visit only
_____ 3. Sometimes
_____ 4. Seldom
4_____ 5. Never

2. Does your medical history for patients include questions as to

	Yes	No	
5	_____	_____	1. Their belonging to risk groups for AIDS or hepatitis?
6	_____	_____	2. Their HIV antibody status?
7	_____	_____	3. Their exposure to hepatitis B?
8	_____	_____	4. Their having other infectious diseases?

3. Do you have immunity against hepatitis B?

_____ 1. Yes, by vaccination
_____ 2. Yes, by contracting the disease
_____ 3. No
9_____ 4. Don't know

4. How often do you wear gloves for patient treatment?

_____ 1. Always
_____ 2. Sometimes
_____ 3. Seldom
10_____ 4. Never

5. Do you use soap or a chemical disinfectant to wash your hands?

	Yes	No	
11	_____	_____	1. Soap
12	_____	_____	2. Chemical disinfectant

6. How often do you wear protective eyeglasses, mask and face shield?

	Always	Sometimes	Seldom	Never	
13	_____	_____	_____	_____	1. Protective eyeglasses
14	_____	_____	_____	_____	2. Mask
15	_____	_____	_____	_____	3. Face shield

7. Do you, after each patient, replace or wash your gloves?

	Yes	No	
16	_____	_____	1. Replace
17	_____	_____	2. Wash

8. Do you routinely use disposable needles and cartridges of local anaesthetics?

	Yes	No	
19	_____	_____	1. disposable needles
20	_____	_____	2. disposable cartridges of local anaesthetics

9. Do you re-use needles and cartridges?

	Yes	No	
21	_____	_____	1. needles
22	_____	_____	2. cartridges

10. After completion of a local anaesthetic administration, do you recap the needle?

_____ 1. Yes, using a needle capping device
_____ 2. Yes, using gloved fingers
_____ 3. Yes, other _____
23 _____ 4. No

11. Approximately, how many needle-stick injuries do you experience in a year?

_____ 1. None
_____ 2. 1 or 2
_____ 3. Between 3 & 5
24 _____ 4. More than 5

12. Which is <u>the most common</u> system you use for routine sterilization of instruments?

_____ 1. Autoclave
_____ 2. Dry heat
_____ 3. Boiling water
_____ 4. Chemical disinfectants
25 _____ 5. Other methods, please specify _____

13. How are your handpieces and 3 in 1 syringes treated between patients?

	Handpieces	3 in 1 syringes
	_____	_____
	_____	_____
	_____	_____
	_____	_____
26-27	_____	_____

1. Thorough cleaning by wiping
2. Thorough cleaning by wiping and chemical disinfection
3. Autoclave or dry heat
4. No cleaning
5. Other methods, Specify_____

14. Which of the following chemical disinfectants are commonly used in your practice? (You can tick more than one answer)

_____ 1. Glutaraldehyde
_____ 2. Chlorhexidine
_____ 3. Alcohol
_____ 4. Hypochlorite solutions
_____ 5. Quaternary ammonium compounds
_____ 6. Phenolic compounds
_____ 7. Iodophors
28-30 _____ 8. Other methods, specify _____

15. Do you feel that your knowledge of sterilization and disinfection is adequate ?

_____ 1. Yes
_____ 2. No
32 _____ 3. Don't know

16. What is the source of information/instruction for your present routine for sterilization? (You can tick more than one answer)

33 _____ 1. Undergraduate training
34 _____ 2. Journals and professional meetings
35 _____ 3. Commercial advertising
36 _____ 4. Other dentists in practice

17. What do you think is <u>the best way</u> for dentists to keep abreast of developments in cross infection control?

_____ 1. Seminars/Courses
_____ 2. Articles in dental journals
_____ 3. HKDA newsletters
37 _____ 4. Other, specify _____

18. Do you think that your infection control practices are adequate?

_____ 1. Yes
_____ 2. No
38 _____ 3. Don't know

19. What is the main obstacle preventing you from achieving ideal infection control? (You can tick more than one answer)

_____ 1. Finance
_____ 2. Time
39 _____ 3. Others, please specify _____

20. Please comment on any aspect of infection control in dentistry you wish to emphasize.

_____

_____

_____

_____

_____

Please return the questionnaire to us at your earliest convenience

Thank you for your kind cooperation